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**Qing Nie\*** ([qnie@math.uci.edu](mailto:qnie@math.uci.edu)), Department of Mathematics, Department of Biomedical Engineering, University of California, Irvine, Irvine, CA 92697-3875. *Noise attenuation and computational tools for biological systems.*

In this talk, I will first discuss noise attenuation in biological systems with feedbacks. I will present a new critical quantity, called Signed Activation Time (SAT) and its relationship with noise amplification. In the second part of the talk, I'll present a new class of efficient numerical algorithms for stiff PDEs that have applications to solving models for spatial dynamics of complex biological systems. (Received September 09, 2010)